**3.** 0.565

**4.** 1.989

**5.** 1.424

**6.** 2.136

**7.** −0.712

**8.** −0.565

**9.** B; Quotient Property

**10.** D; Power Property

**11.** A; Power Property

**12.** C; Product Property

**13.** $\log_3 4 + \log_3 x$

**14.** $\log_8 3 + \log_8 x$

**15.** $1 + 5 \log x$

**16.** $\ln 3 + 4 \ln x$

**17.** $\ln x - \ln 3 - \ln y$

**18.** $\ln 6 + 2 \ln x - 4 \ln y$

**19.** $\log_7 5 + \frac{1}{2} \log_7 x$

**20.** $\frac{2}{3} \log_5 x + \frac{1}{3} \log_5 y$

**21.** The two expressions should be added, not multiplied; $\log_2 5x = \log_2 5 + \log_2 x$

**22.** The 3 is with the wrong term; $\ln 8x^3 = \ln 8 + 3 \ln x$

**23.** $\log_4 \frac{7}{10}$

**24.** $\ln 3$

**25.** $\ln x^6 y^4$

**26.** $\log 11x^2$

**27.** $\log_5 4\sqrt[3]{x}$

**28.** $\ln \dfrac{64}{y^4}$

**29.** $\ln 32x^7 y^4$

**30.** $\log_3 x$

**31.** B;

$\log_5 \dfrac{y^4}{3x} = \log_5 y^4 - \log_5 3x$ \qquad Quotient Property

$= 4 \log_5 y - (\log_5 3 + \log_5 x)$ \qquad Power and Product Properties

$= 4 \log_5 y - \log_5 3 - \log_5 x$ \qquad Distributive Property

**32.** B;

$9 \log x - 2 \log y = \log x^9 - \log y^2$ \qquad Power Property

$= \log \dfrac{x^9}{y^2}$ \qquad Quotient Property